## Supplement to 'Mimicking postseismic creep in the laboratory: Testing models for transient creep in the upper mantle'

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- Samples are rapidly loaded and immediately transitioned to stress relaxation, after which samples are reloaded for a creep test (right panel) followed by an additional relaxation from guasi-steady state.
- The stiffness of the apparatus ( $E_{apparatus}$ ) is obtained by matching the strain rate and differential stress of the quasi-steady state interval to those at the start of the subsequent relaxation.

## **RESPRESENTATIVE MICROSTRUCTURES**



- Grain-size evolution is negligible over the course of the experiments.
- CPO is initially weak and does not significantly evolve during deformation.
- Dislocation decoration reveals an increase in dislocation density over the course of the experiments.